

VENTRAL NEURAL PATTERING BY NKX HOMEobox GENES: NKX6.1
CONTROLS SOMATIC MOTOR NEURON AND VENTRAL INTERNEURON
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Abstract of the Disclosure

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This invention provides a method of converting a stem cell into a ventral neuron which comprises introducing into the stem cell a nucleic acid which expresses homeodomain transcription factor Nkx6.1 protein in the stem cell so as to thereby convert the stem cell into the ventral neuron. Provided are methods of diagnosing a motor neuron degenerative disease in a subject. Also provided is a method of treating neuronal degeneration in a subject which comprises implanting in diseased neural tissue of the subject a neural stem cell which comprises an isolated nucleic acid molecule which is capable of expressing homeodomain Nkx6.1 protein under conditions such that the stem cell is converted into a motor neuron after implantation, thereby treating neuronal degeneration in the subject.

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